NATURAL

Natural

Release Notes

Version 3.1.5 for Mainframes

SOFTWARE AG

Order Number: NAT315-008IBB

This document applies to Natural Version 3.1.5 for Mainframes and to all subsequent releases. Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Natural 3.1.5 Release Notes for Mainframes - Overview

These Release Notes inform you of the enhancements provided with Version 3.1.5 of Natural. This version contains all ZAPs, INPL updates, early warnings and source changes applied to Natural 3.1.4 as error corrections.

> ⚠ This CD-ROM contains documents concerning the upcoming Natural Version 5.1.1 for Windows, Natural's Single Point of Development and the Natural Development Server (NDV) Version 1.1.1. The documents and the links referring to them have been included as advance information and may be subject to subsequent changes without notice.
>
> The status of the documentation for the aforesaid not yet released products is **preliminary**.

For background information, you should also read the Natural Version 2.3.3, 2.3.4, 3.1.2, 3.1.3 and 3.1.4 Release Notes for Mainframes which are available with Version 3.1.5 on the current Natural Documentation CD-ROM (in the folder Archive) and on SAGnet.

Natural 3.1.5 Release Notes - General Information

This document covers the following topics:

- Introduction
- Prerequisites
- Migration Hints
- Documentation
- End of Maintenance of Natural Versions
- Natural and Other Software AG Products
- DRS Printing Facility
- Information on Upcoming Releases

Introduction

These Release Notes inform you of the enhancements provided with Version 3.1.5 of Natural.

Natural 3.1.5 contains all ZAPs, INPL updates, early warnings and source changes applied to Natural 3.1.4 as error corrections.

Prerequisites

Operating/Teleprocessing Systems Required

Natural Version 3.1 requires the following versions of the following operating/teleprocessing systems:

Product	Version
BS2000/OSD	2, 3 or 4
OS/390	2.6, 2.7, 2.8, 2.9 or 2.10 Natural for VSAM Version 3.1.5 requires that the corresponding DFSMS Version is installed, minimum requirement is DFSMS Version 1.5.
z/OS	1.1 (Natural Version 3.1.5 supports z/OS to the same extent as it supports OS/390; new features of z/OS will be supported only as of Natural Version 4.1)
VSE/ESA	2.3, 2.4 or 2.5 To use a global buffer pool: VSE/ESA Version 2.4 or above with the ESA/390 Subsystem Storage Protection Feature must be installed. Natural for VSAM Version 3.1.5 requires that the corresponding VSE/VSAM Version is installed.
VM/ESA	2.3, 2.4
z/VM	3.1 or 4.1 (Natural Version 3.1.5 supports z/VM to the same extent as it supports VM/ESA; new features of z/VM will be supported only as of Natural Version 4.1)
Com-plete	5.1.3 or 6.1.1 (maintenance for Version 5.1.3 ends on Dec. 31, 2001)
CICS/ESA	4.1, CICS TS 1.2, 1.3 or 2.1
CICS/VSE	2.3, CICS TS 1.1 or 1.1.1
IMS/TM	6, 7
UTM	4 or 5
TIAM	All versions available with OSD Version 2, 3 or 4.

Software AG provides Natural support for the operating/teleprocessing system versions supported by their respective manufacturers. Generally, when an operating/teleprocessing system provider stops supporting a version of an operating system, Software AG will stop supporting that operating system version.

Although it may be technically possible to run a new version of Natural on an old operating/teleprocessing system, Software AG can not continue to support operating/teleprocessing system versions that are no longer supported by the system's provider.

Assemblers Required

Natural Version 3.1 requires one of the following assemblers for the assembly of its source modules:

- "HL" assembler (IBM),
- "Assembh" assembler (Siemens).

It may well be possible that the source modules can be assembled with older assemblers; however, Software AG cannot guarantee this.

Migration Hints

When migrating from an earlier Natural version to Natural for Mainframes Version 3.1.5, you must observe the following hints:

Use of USR* programs

Make sure that the latest USR* programs from the delivered library SYSEXT are used.
If you have copied USR* programs to your FUSER system file, you have to replace them before use.

MAXBUFF Restrictions - RPC only

If you are using the ADALNK transport method to communicate with the EntireX Broker (default on mainframe), the following restrictions for MAXBUFF apply depending on the value specified for ACIVERS:

Value for ACIVERS	Maximum Value for MAXBUFF
ACIVERS=1	31
ACIVERS=2	30 (default value)
ACIVERS>2	30

For those migrating from Natural 2.3 to 3.1:

If MAXBUFF=31 has been used before, you must adapt your NATPARM in one of the following two ways:

1. specify ACIVERS=1 and leave MAXBUFF untouched
2. specify MAXBUFF=30 and leave ACIVERS untouched

The latter is recommended to enable the support of EntireX Security.

Documentation

A completely updated set of documents is distributed with this release. In addition, the following major changes/enhancements have been made:

- A new Documentation Homepage template for all future online-based documentation sets has been introduced and adapted to the needs of the Natural documentation. This template serves the objective of having a common layout for Documentation Homepages across all of our products.

● To remove redundancies, the following parts of the Natural documentation have been reorganized.

Statements Documentation

The structure of the statements documentation and the internal navigation have been improved, e.g. syntax boxes have been provided with internal links that enable rapid access to the relevant parts of the syntax descriptions.

User's Guide, Operations Documentation

The Natural Profile Parameters, Session Parameters and Parameter Modules have been removed from the Operations and Reference documents and have been reorganized in a Parameter Reference document that is now common to all platforms (mainframe and non-mainframe).

Also, the system commands have been reorganized and transferred from the User's Guide to a document in the Reference documentation that is now common to all platforms and eliminates previous redundancies.

In addition, the new cross-platform documents feature improvements similar to those accomplished in the Statements documents.

Reference Documentation

Also in response to the new Documentation Homepage template, the Reference document has been reorganized into the following parts:

● Programming Reference
● Parameter Reference
● Command Reference

These documents are available with the current edition of the Natural Documentation CD-ROM and will be published and updated via SAGnet as well.

Error Messages

To enable viewing and printing of error message explanations when no active Natural Version 3.1 nucleus is available, the English Natural error messages in the range of NAT0001 to NAT9999 are now documented in the Messages and Codes documentation. Library-specific messages and messages relating to other Software AG products are not included.

The German Natural error messages and warnings were updated with the release of Natural Version 3.1.5 and are available online within Natural.

End of Maintenance of Natural Versions

With the release of Natural Version 3.1.5, the maintenance for Natural Version 3.1.3 for Mainframes ends. Extensions of the maintenance for Natural Version 3.1.3, if any, will be published via SAGnet.

Software AG strongly recommends that you migrate to Natural Version 3.1.5 as soon as possible. Migrating to Natural Version 3.1.5 will be inevitable if you intend to establish a Single Point of Development environment.

Natural and Other Software AG Products

To use the following Software AG products in conjunction with Natural Version 3.1, the following product versions (or above) are required:

Product	Prod. Code	Version
Adabas	ADA	7.1.2 (Version 7.1.2 is supported to the same extent as it supports Version 6.2; new features of Adabas Version 7.1.2 will be supported only as of Natural Version 4.1)
Adabas Online System	AOS	7.1.2
Adabas SQL Server	ESQ	1.4.3
Adabas Review	REV	4.1.3
Adabas Text Retrieval	TRS	2.1.4
Com-plete	COM	6.1.1
Con-form	CMF	3.3.1
Con-nect	CNT	3.3.1
EntireX Broker Stub	EXX	5.3.1, 6.1.1 Version-compatibility with EntireX Broker is required.
Entire Event Management	NCL	2.1.2
Entire Net-Work	WCP	5.6.1 (This product is required if you are using Natural Security in a heterogeneous environment.)
Entire Operations	NOP	3.2.1
Entire Output Management	NOM	2.1.1
Entire System Server	NPR	3.1.1
Entire System Server Interface	---	The Entire System Server Interface (ESX) is no longer a separate product but part of Natural (and included on the Natural installation tape). See also Installing the Entire System Server Interface in the Natural Installation Guide for Mainframes.
Entire Transaction Propagator	ETP	1.4.1
EntireX DCOM	EXX	5.3.1, 6.1.1 (required for NaturalX only)
Natural Advanced Facilities	NAF	2.3.7
Natural CICS Interface	NCI	2.3.7
Natural Connection	NTC	3.1.5
Natural Construct	CST	4.3.1
Natural Development Server	NDV	1.1.1 1 (release is planned for November, 2001)

Product	Prod. Code	Version
Natural Document Management	NDM	1.6.3
Natural for DB2	NDB	3.1.5 (this version supports DB2 V5R1; V6R1 and V7R1 are supported to the same extent as with V5R1; new features of DB2 V6R1 and V7R1 will be supported only as of Natural for DB2 Version 4.1)
Natural for DL/I	NDL	2.3.7
Natural for SQL/DS	NSQ	3.1.5
Natural for VSAM	NVS	3.1.5
Natural IMS/TM interface	NII	2.3.7
Natural ISPF	ISP	2.4.4
Natural Optimizer Compiler	NOC	2.3.7, 3.1.5 Beta Version
Natural Security for Mainframes	NSC	3.1.5
Natural TIAM interface	NRT	3.1.5
Natural TSO interface	NTI	3.1.5
Natural UTM interface	NUT	3.1.5
Natural VM/CMS Interface	NCM	3.1.5
NaturalX	NXX	3.1.4
Predict	PRD	4.1.2 (if both the Natural Development Server and Predict are installed, then Predict Version 4.2.1 is required)
Predict Application Control	PAC	2.2.2
Predict Case	PCA	2.5.2
Review Natural Monitor	RNM	3.6.2
Super Natural	NSN	3.3.2

Although it may be technically possible to run versions of other Software AG products older than the ones listed above in conjunction with a new version of Natural, Software AG can not continue to support such combinations.

DRS Printing Facility

Software AG introduces Levi, Ray & Shoup, Inc. (LRS) as an Authorized Partner for Natural Printing Solutions. Natural provides an interface to the LRS Enterprise Print Management family of products. This interface enables you to route the Natural print output to the LRS Dynamic Report System (DRS).

For more details, see also the LRS homepage at http://www.lrs.com/epm/drs.htm.

Information on Upcoming Releases

With the next major release of Natural (Version 4.1), it is planned to introduce the following:

- ENDING AT Clause in READ or HISTOGRAM Statements
- Discontinued Support of Applications Cataloged with Natural Version 2.2
- Delivery of SYSPC Utility Discontinued

ENDING AT Clause in READ or HISTOGRAM Statements

In previous Release Notes, a change notice concerning a planned change in the semantics of the THRU keyword in Natural Version 4.1 was included. This change notice does not apply. The semantics of the THRU keyword will remain unchanged.

Discontinued Support of Applications Cataloged with Natural Version 2.2

With the next major release of Natural (Version 4.1), applications that were cataloged with Natural Version 2.2 can be executed without any conversion procedure being required, and without your having to make any adjustments to the programs except for the ones mentioned in the Natural Version 4.1 Release Notes for Mainframes.

> ⚠️ However, the next major release of Natural following Version 4.1 will require
> that all such applications are recataloged to be executed with that version.

Software AG strongly recommends that existing applications be recataloged with Natural Version 3.1 to take advantage of improved runtime handling for such objects.

Delivery of SYSPC Utility Discontinued

With the next major release of Natural (Version 4.1), the delivery of the SYSPC utility will be discontinued. Software AG recommends that existing applications using the SYSPC utility be modified so that they can be used with the utility SYSTRANS, NATLOAD or NATUNLD instead. With Entire Connection Version 4.2.1, new transfer tasks are provided that no longer require the SYSPC utility.

Natural 3.1.5 Release Notes - Changes, Enhancements, New Features

This document covers the following topics:

- Natural Turbo Performance Plug-In **New**
  - Global Buffer Pool Operating Program Changed
  - Buffer Pool Manager Enhanced
  - Buffer Pool Cache **New**
  - Buffer Pool Management Utility SYSBPM Enhanced
  - Program Loader Enhanced
- Default Database Type Changed
- Natural System Variables, New Values
- Natural Profile Parameters, New/Changed Values
- Version Check at Session Initialization Refined
- Version Check for Module NATCONFG Introduced
- Length Calculation for Edit Masks With Leading Filler Character Corrected
- Adabas TID Generation Changed for X48 Communication
- Natural Remote Procedure Call
- Delivery of Assembler Macros of Type E Discontinued

Natural Turbo Performance Plug-In New

With Natural Version 3.1.5, the Natural turbo performance plug-in is generally available for the operating systems OS/390, VSE/ESA, BS2000/OSD and VM/ESA (except the buffer pool cache for VM/ESA).

Significant performance improvements are provided by the following features:

- a new buffer-pool search algorithm reduces the time required to seach for an object in the buffer pool,
- a buffer-pool cache reduces system file access,
- using the Adabas multi-fetch option speeds up the process of loading objects into the buffer pool.

The performance plug-in must be explicitly enabled to become functional. This is done with the PLUGIN parameter.

Global Buffer Pool Operating Program Changed

The operation of the parameter IDLE has been changed for OS/390. As a consequence, this parameter setting is ignored when a task does not own a buffer-pool cache. This means that a MODIFY operator command is executed immediately when issued.

If the task owns a buffer-pool cache, this parameter now specifies the number of seconds to elapse before the GBP operating program checks for each buffer-pool cache if its associated buffer pool is still active.

For this reason, the default value of the IDLE parameter has been changed to 60 seconds. If you specify this value explicitly, you are recommended to set a value of at least 60 seconds.

Buffer-Pool Manager Enhanced

The enhanced buffer-pool manager is activated by setting the Natural parameter PLUGIN to BP.

Objects residing in the buffer pool are located using a new search algorithm based on a hash table. This eliminates one of the most important performance bottlenecks, especially for environments using very large buffer pools (30 MB and more).

The more objects are loaded in the buffer pool, the higher is the saving of CPU time using the enhanced buffer-pool manager.

Buffer-Pool Cache New

The buffer-pool cache is an optional feature. Objects residing in the buffer pool which have to be replaced by an other object due to missing space are cached in a data space. A subsequent load request for this object will be satisfied directly from the buffer-pool cache. This reduces significantly the system file accesses, especially for rather small buffer pools or for sites using very large Natural objects.

> **Note:**
> The buffer pool cache is available in conjunction with a global buffer pool only. It is not available with VM/ESA.

If the size of the Natural global buffer pool is restricted due to any system requirements, expand the buffer pool by allocating a data space, which will be handled as a caching area.

Buffer-Pool Management Utility SYSBPM Enhanced

The enhanced utility SYSBPM offers additional statistical information. In addition, it offers special statistic information about the new buffer-pool cache.

With the enhanced utility, it is possible to monitor buffer pools initialized by the enhanced buffer-pool manager, however, additional statistical information made available by the enhanced buffer-pool manager is displayed only if the profile parameter PLUGIN=BP is **not** specified.

If a cache is used, the item "Total use" displayed in the "Object Directory Information" screen and the item "Total" displayed in the "Individual Object Statistics" screen are not lost if the object is removed from the buffer pool and saved to the cache. Therefore, these values indicate the number of uses of this object since it was loaded from the system file. In addition, the load time displayed in the "Object Directory Information" screen is preserved, and constitutes the load time when the object was loaded from the system file. The "Total use" and "Total" counts can now be considerably higher than without cache.

Program Loader Enhanced

The enhanced program loader is activated by setting the Natural parameter PLUGIN to PL.

The enhanced program loader uses the Adabas multi-fetch option to significantly reduce the number of Adabas calls necessary to load a Natural object.

The more objects are loaded into the Natural buffer pool and the larger the objects are, the higher the saving of Adabas calls.

If parameter PLUGIN=PL is specified, the values specified for the CFWSIZE parameter (default is 32 KB) is automatically increased by 16 KB. Adapt your threadsize accordingly, if need be.

Default Database Type Changed

With Natural Version 3.1.5, the default database type changes from Adabas Version 5 to Adabas Version 7. This applies to the DB profile parameter and to the NTDB macro. Adabas Version 7 is supported to the same extent as of Adabas Version 6.2, new functionality will be supported only as of Natural Version 4.1.

Natural System Variables, New Values

To enable the use of a Natural Development Server for Natural's Single Point of Development, new values have been introduced for the following system variables:

System Variable	New Value
*TPSYS	SERVSTUB
*SERVER-TYPE	DEVELOP

Natural Profile Parameters, New/Changed Values

- New Value ASYL for Profile Parameter TTYPE
- Maximum Value for Profile Parameter MT Changed
- Maximum Value for Profile Parameter TSIZE Changed
- New Value for Profile Parameter ADAMODE
- New Parameter LBPNAME for Sharing Local Buffer Pools under OS/390 Batch and TSO

New Value ASYL for Profile Parameter TTYPE

A new value ASYL has been provided for the Natural profile parameter TTYPE. This allows you to start an asynchronous Natural session under CICS that writes line-oriented output to the SENDER destination.

TTYPE=ASYL is a combination of TTYPE=ASYN (the default for an asynchronous session) and TTYPE=BTCH. Like BTCH, the output is line-oriented, but like ASYN, the *DEVICE system variable is set to ASYNCH.

TTYPE=ASYL allows you to write test output (e.g. in a Natural RPC server environment) to the primary report that is assigned to a list dataset.

Maximum Value for Profile Parameter MT Changed

The maximum value for the profile parameter MT has been changed from 86399 to 9999999 to be compatible with the maximum value for the session parameter MT. This parameter only applies to programs executed in batch mode or under TSO. It determines the maximum amount of CPU time which can be used by a Natural program.

Note: If this parameter is specified from within Natural Security, the maximum value is 32767. This will be changed with Natural Version 4.1 to comply with the maximum value of the profile and session parameter MT.

Maximum Value for Profile Parameter TSIZE Changed

The maximum value for the profile parameter TSIZE has been changed from 64 to 128. This parameter determines the size of the buffer to be used for the Adabas Text Retrieval facility.

New Value for Profile Parameter ADAMODE

A new value "3" has been provided for the Natural profile parameter ADAMODE. This allows you to start Natural with one UQE using Adabas X48 communication for nucleus calls and one UQE for application calls to include database calls sent by 3GL programs into Natural application transactions.
This enhancement makes the special purpose zap NA42023 obsolete.

New Parameter LBPNAME for Sharing Local Buffer Pools under OS/390 Batch and TSO

When running multiple NATURAL sessions under OS/390 in a batch or TSO environment concurrently, for example, using a Natural RPC, each session allocates storage for separate local buffer pools. Except for the Natural OS/390 batch server, the local buffer pools are not shared, that is, if the different sessions use the same Natural objects, these have to be loaded once for each session.

With Natural Version 3.1.5, it is possible to generate the Natural OS/390 batch and TSO front-end modules NATOS and NATTSO to share local buffer pools. The sharing of local buffer pools is controlled by the new generation macro parameter LBPNAME. For details see Installing the Natural TSO Interface or Natural in Batch under OS/390.

Version Check at Session Initialization Refined

With Natural Version 3.1.5, the check for matching versions of the Natural nucleus and the FNAT system file has been refined. To prevent unpredictable errors during session execution, any attempt to start a Natural Version 3.1 nucleus with a Natural Version 2.3 FNAT system file will be rejected.

Version Check for Module NATCONFG Introduced

With Natural Version 3.1.5, a check for matching versions of the Natural nucleus and module NATCONFG has been introduced. To prevent unpredictable errors during session execution, any attempt to start a Natural Version 3.1.5 nucleus with a NATCONFG module from a previous system maintenance (SM) release will be rejected.

Note: If you adapted an existing NATCONFG module for your own purposes, you cannot continue using that module, but have to transfer your changes to the new NATCONFG source before you assemble and link NATCONFG as described in the corresponding installation description.

Length Calculation for Edit Masks With Leading Filler Character Corrected

With Natural Version 3.1.5, leading filler characters specified in edit masks for numeric operands are no longer counted as being part of the edit mask. This may reduce the output length of numeric fields with an associated edit mask so that following output in the same line is shifted one position to the left. To apply the correction to an existing object, it must be cataloged with Natural Version 3.1.5.

Example:

```
P(P3) = -12
DISPLAY P (EM=-*ZZZ)Output before Natural Version 3.1.5:
    P
  -----
   -12
Output with Natural Version 3.1.5:
   P
  ----
   -12
```

Adabas TID Generation Changed for X48 Communication

With Natural Version 3.1.5, the value of the generated Adabas TID (the last 8 positions of the global communication ID) will be independent of the value specified for the ADAMODE profile parameter. This enhancement makes special purpose zap NA42024 obsolete.

Natural Remote Procedure Call

New User Exit NATRPC01

The Natural RPC does not offer the possibility to use an error transaction on the server side. Although it is possible to define an error transaction, control will never be passed in the event of an error. Instead of using an error transaction, you can now use the new user exit NATRPC01 (described in the Natural Remote Procedure Call documentation).

New User Exit USR2032N

With the new user exit USR2032N, Natural provides the same functionality as an EntireX client, that is, the commit option is set for the next CLOSE CONVERSATION statement. This means that an implicit END TRANSACTION is issued on the server side when the conversation is closed.
This enables you to write an application on the server without using explicit END TRANSACTION statements, this application being callable from a Natural client as well as from an EntireX client.
The user exit has to be called before the next CLOSE CONVERSATION statement is executed.

Support of CSCPATT Parameter Discontinued

As the CSCI transport protocol is no longer supported, the CSCPATT parameter of the NTRPC macro will be rejected with Natural Version 3.1.5. The CSCPATT subparameter of the RPC profile parameter will be ignored.

The value CSCI will be rejected if specified as transport protocol for the DFS, RDS or TRANSP parameters of the NTRPC macro or for the DFS, RDS or TRANSP subparameters of the RPC profile parameter.

Delivery of Assembler Macros of Type E Discontinued

With Natural CICS Interface Version 2.3.6, Natural for DL/I Version 2.3.6, Natural for VSAM Version 2.4.6 and Entire Review Natural Monitor Version 3.6.1, delivery of assembler macros of Type E has been discontinued for VSE installations.

Natural's Single Point of Development

Preliminary Information!

This document covers the following topics:

- Remote Development Scenario for OS/390
- Components and Facilities
- Core Features

Remote Development Scenario for OS/390

The upcoming Version 5 of Natural for Windows will connect to Natural 3.1.5 for mainframes through the new Natural Development Server plug-in. This infrastructure enables the developer to create and maintain Natural applications for the mainframe with Natural Studio on the desktop. In future, functionality from other Natural development products will be made available through Natural Studio, making Natural on the Windows desktop the single point of development for all Natural platforms.

Components and Facilities

Currently, the following components and facilities are available:

- Natural's Single Point of Development
- Natural Development Server for OS/390, other platforms planned.

Core Features

The new Single-Point of Development scenario offers the following core features:

- **Remote file manipulation**

  In the Natural Studio views, developers can manipulate (move, copy) program objects, wherever those objects are located.

- **Remote editing**

  Natural source files are transparently retrieved from and saved to the target environment, and edited in Natural Studio in Windows.

- **Remote compiling**

  Compiles are initiated from Natural Studio by submitting commands to the target environment.

- **Remote debugging**

  The application executes on the target environment, with debugging controlled from Natural Studio.

For detailed information, refer to the Natural's Single Point of Development documentation and to the Natural Version 5.1.1 Release Notes for Windows.

Natural Security Version 3.1.5 for Mainframes

This section describes the enhancements provided with Natural Security Version 3.1.5 for Mainframes. It covers the following topics:

- Using Multiple Versions of Natural Security
- User Maintenance Enhancements
- Library Maintenance Enhancements
- Utility Maintenance Enhancements
- Administrator Services Enhancements
- Other Enhancements

Using Multiple Versions of Natural Security

As stated under the heading FSEC in the section General Installation Information in the Natural Installation Guide for Mainframes, the Natural Security system file FSEC can be shared by Natural Security Versions 2.3 and 3.1.

To ensure the consistency and completeness of the security data on a shared FSEC file, it is strongly recommended that you use only the highest Natural Security version for Natural Security maintenance.

If you use a shared FSEC file, it is not necessary to transfer any security data with SECULD/ SECLOAD.

User Maintenance Enhancements

Time Differential

You can now set the Time Differential in user profiles not only to a value of hours/minutes, but also to "*" (this has the same effect as the Natural profile parameter TD=AUTO, that is, the time differential will be computed by comparison of physical and logical machine times).

UNLOCK System Command

In user profiles of user types A, P and G, a new Additional Option "Unlock Objects" ist provided. It allows you to control the use of the Natural system command UNLOCK, which is used in conjunction with the Natural Development Server. Possible settings of the Unlock Objects option are:

N	The user cannot use the UNLOCK command.
Y	The user can use the UNLOCK command, but only for his/her own programming objects (that is, objects locked under the same user ID).
F	The user can use the UNLOCK command for any locked programming object.

Library Maintenance Enhancements

Statement Restrictions

The following Natural statements can now also be allowed/disallowed: CALLDBPROC, CLOSE CONVERSATION, CREATE OBJECT, DEFINE CLASS, DEFINE WORK FILE, END-RESULT, OPEN CONVERSATION, SEND METHOD.

Natural RPC Restrictions

As part of the Natural RPC Restrictions in library profiles, a new server session option "Close all databases" is provided. It causes all databases which have been opened by remote subprograms contained in the library to be closed when a logon/logoff to/from the library is performed. Possible settings of this option are:

N	The databases are not closed when a logon/logoff to/from from the library is performed.
Y	The databases are closed when a logon to the library is performed.
F	The databases are closed when a logon to the library is performed, and when a logoff from the library is performed.

This option is only relevant if the option LOGONRQ=ON of the NTRPC macro in the Natural parameter module is set. If you wish to have one user-queue element per client session for each database accessed by the RPC server, it is recommended that you set LOGONRQ=ON and "Close all databases" to "Y" or "F".

Utility Maintenance Enhancements

Support of Old Protection Mechanism

As the old utility protection mechanism will no longer be supported as of one of the next releases, it is strongly recommended that the new utility protection mechanism by means of utility profiles (which was introduced with Version 2.3.1) be used in order to control the use of your Natural utilities.

SYSBPM Utility

The revised SYSBPM utility is fully supported by Natural Security. The revised functionality is reflected as far as possible in the existing utility profiles. It is not necessary to perform any conversion procedure in order to continue to use the existing utility profiles. The functions/commands which already existed in the old profiles are marked with an asterisk (*) on the SYSBPM utility profile screens; their protection is fully compatible with previous versions. However, in order to control the full range of SYSBPM functions/commands properly, you may have to adjust in your SYSBPM utility profiles the settings of the new functions/commands, that is, those which are *not* marked with an asterisk.

SYSMAIN Utility

An inconsistency in the SYSMAIN utility profiles has been removed: The options FNAT, FSEC and FDIC (which control the SYSMAIN functions SET FNAT, SET FSEC and SET FDIC respectively) can no longer be set in library-specific and user-library-specific utility profiles, but only in user-specific utility profiles.

SYSOBJH Utility

Previously, utility profiles for the SYSOBJH utility could only be defined in Natural Security on non-mainframe platforms. Now you can also define them in Natural Security on a mainframe computer.

SYSRPC Utility

Previously, utility profiles for the SYSRPC utility could only be defined in Natural Security on non-mainframe platforms. Now you can also define them in Natural Security on a mainframe computer.

Administrator Services Enhancements

General Options - Logging of Maintenance Functions

This option displays a window in which you can determine the object types whose modifications are to be logged. Until Version 3.1.4, "external objects" could only be marked collectively here, applying to all types of external objects; as of Version 3.1.5, you can activate/deactivate the logging for each type of external object individually.

Processing of Maintenance Log Records

- The Log File Maintenance batch-mode function "List Log Records" has been enhanced: In addition to listing the contents of the log file, it also displays for each record the components of the security profile concerned; moreover, the components that were modified will be marked. The batch report displayed corresponds to the information displayed by the function List Security Profile Maintenance Logs.
- Until Version 3.1.4, the object type "external objects" could only be selected collectively for the functions List Security Profile Maintenance Logs and Log File Maintenance. As of Version 3.1.5, you can select each type of external object individually.

Other Enhancements

Support of Natural Development Server

If the Natural Development Server is installed at your site, you can control the use of its object types - base applications and compound applications - in the new Application Maintenance section of Natural Security.

Interface Subprogram NSCXR

The interface subprogram NSCXR provides a new function which allows you to retrieve the ID of a user or library. You specify the name of the user or library, and the interface subprogram will return the corresponding user/library ID. An example program PGMXR014 is available in library SYSSEC.

PROFILE Command

The Natural system command PROFILE (which shows the user the conditions of use currently in effect) now also indicates whether, if the user is linked to the current library, the link is a special link or not. A special link ID will be indicated by an asterisk (*) next to the field Link ID.

Natural Optimizer Compiler Version 3.1.5

This document covers the following topics:

- Version 3.1.5 Beta Test Release
- Enhancements
- Compatibility

Version 3.1.5 Beta Test Release

With Natural Version 3.1.5, Natural Optimizer Compiler Version 3.1.5 is available as a beta test release which includes the major enhancements described below.

The Natural Version 3.1.5 product comes with the Natural Optimizer Compiler Version 2.3.7, however, with the new Version 3.1.5 utilities being already integrated. The Natural Optimizer Compiler documentation supplied refers to Version 2.3.7, but is valid for Version 3.1.5, too. All features available with Version 3.1.5 only are marked correspondingly.

If you are interested in participating in the Natural Optimizer Compiler Beta Test, please contact force@softwareag.com.

Enhancements

Version 3.1.5 of the Natural Optimizer Compiler offers the following major enhancements:

- Program execution is speeded up significantly by means of caching variable values internally.
- The EXAMINE statement is optimized for certain clauses.
- Additional options are provided to give more control over how code is generated.
- The effect of the NOSGNTR option has been revised, also respecting the value of the PSIGNF compiler option.
- The NODBG option is also effective when INDEX, RANGE or OVFLW options are specified.

In addition, miscellaneous other improvements increasing the degree of optimization have been made.

For more information on new features, enhancements and corrections, see the Natural Optimizer Compiler documentation.

Compatibility

Natural objects cataloged with Natural Optimizer Compiler Version 2.3.x or with Natural Optimizer Compiler Version 2.1.6 (for Natural Version 2.2) can be executed under Natural Version 3.1.5.

Natural objects cataloged with Natural Optimizer Compiler Version 3.1.5 can be executed under Natural Versions 3.1.2, 3.1.3 and 3.1.4. However, Software AG strongly recommends that you migrate these environments to Natural Version 3.1.5 as soon as possible.

Natural for VSAM Version 3.1.5

This document covers the following topics:

- Natural for VSAM Version 3.1.5 Available
- New Features and Enhancements

Natural for VSAM Version 3.1.5 Available

With Natural Version 3.1.5, a new Version of the Natural VSAM interface is generally available. Natural for VSAM Version 3.1.5 is the successor of Natural for VSAM Version 3.1.1 that has been available as controlled release under Natural Version 3.1.4. This document provides only a short overview of the new features and enhancements. For detailed information, see the Natural for VSAM documentation.

New Features and Enhancements

The following new features and enhancements are available:

- **Coupling Facility Data Tables**

  The Coupling Facility Data Tables (CFDT) have been implemented under OS/390 and CICS.

- **Local Shared Resource (LSR)**

  The Local Shared Resource (LSR) has been enhanced under OS/390 and VSE/ESA.

- **Enhanced Program Loader Support**

  The Enhanced Program Loader of Natural now supports VSAM system files. For further information, see Program Loader Enhanced.

- **Natural VSAM Nucleus**

  The performance of the Natural for VSAM nucleus has been improved considerably.